

**REMARKS**

***Claims Rejection - 35 USC § 102***

5. The Examiner has rejected claim 14 as being anticipated by U.S. Patent No. 5,709,645. Claim 14 has been canceled from the claim set, thereby overcoming the Examiner's objection in this regard.

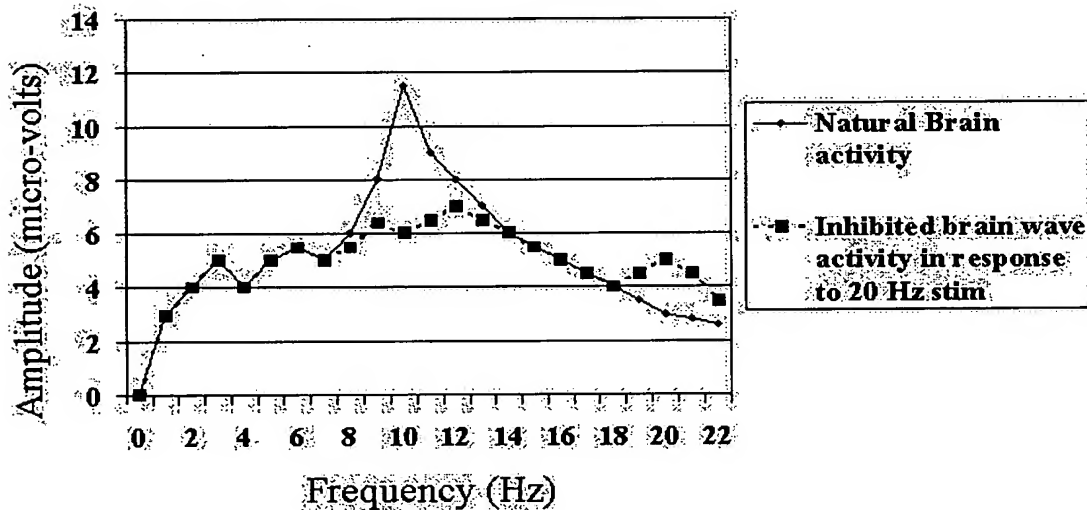
6. The Examiner has rejected claims 6 and 7 as being unpatentable in view of an article by Timmerman. Applicant respectfully disagrees and provides the following comment.

Claims 6 and 7 are directed to a unique method of suppressing aberrant brain waves, by applying a stimulation frequency that is double the aberrant brain wave frequency. Nowhere throughout Timmerman is there any suggestion or comment of trying to suppress such aberrant brain waves. By direct contrast, Timmerman teaches in the abstract that "Twice alpha stimulation significantly increased theta, beta 1, beta 2..." (emphasis added) brain activity.

Aberrant brain wave activity is defined as unusually high activity of one particular frequency of brain waves, causing a number of problems in the person experiencing such over-activity. Depending on the frequency that is overly active, the patient may experience such problems as seasonally affected disorder (SAD) or fibromyalgia syndrome. Through exposure to double the frequency of the particular aberrant wave frequency experienced by the patient, it has been uniquely found by the present inventor that brain waves activity at the aberrant frequency is significantly suppressed, thereby also eliminating the problems associated with the particular frequency's over-activity.

By way of illustration, the Examiner's attention is drawn to the graph below, in which alpha wave (10 Hz) activity can be seen to have the highest activity. Such high alpha activity is commonly associated with depression and seasonal affective disorder. With exposure to twice alpha stimulation at 20 Hz, it can be seen that there is a significant drop in activity at the 10 Hz frequency, and a general leveling off of brain wave activity.

## Brain Wave Response to 20- Hz Stimulation



Applicant submits that evidence of such suppression of overly active brain wave activity at a particular frequency is neither taught nor suggested by Timmerman.

### *Claims Rejection - 35 USC § 103*

7. The Examiner has rejected claims 1-5 as being unpatentable over Chuprikov (U.S. Patent No. 5,137,018) in view of Yoon (U.S. Patent No. 6,875,167).

Claim 1 has been amended to incorporate the subject matter of claim 4. New independent claim 18 has also been added which covers the subject matter of claims 1 and 5. As amended, claim 1 now teaches that the transition between steps a/b and c in the process is rapid, taking about 30 seconds, to enhance disassociation in a hyperactive child. New claim 18 teaches that the transition between steps a/b and c in the process is more gradual, taking at least 3 minutes. As argued previously, sudden shifts in stimulation frequency are needed when treating attention deficit children, who can otherwise get bored or become easily distracted. Gradual shifting of stimulation frequency is useful when treating older patients or those suffering from anxiety, as the gradual shift has been found by the inventor to be gentler and less agitating on such subjects. By the Examiner's own admission, neither Chuprikov nor Yoon teach sudden or gradual shifts in stimulation frequency for the claimed purposes. Applicant submits that amended claim 1 and new claim 18 teach novel and unobvious features over the cited references.

Regarding claims 2 and 3, these claims depend upon claim 1 and must be read in such a context. When read in conjunction with claim 1, Applicant submits that Chuprikov does not teach a stimulation method similar to that of claims 2 or 3. A similar argument applies to new claims 19 and 20, which depend upon new independent claim 18.

8. The Examiner has rejected claim 8 as being unpatentable over Timmerman.

The Examiner is requested to note those comments presented earlier in response to the Examiner's citation Timmerman against claims 6 and 7, as the same arguments apply to the Examiner's present objection to claim 8 in view of Timmerman.

9. The Examiner has rejected claims 9-12 and 15-17 as being unpatentable over Gorges (U.S. Patent No. 4,315,502). Applicant respectfully disagrees.

As argued in our first response, the inventive features of claims 9-12 lies in the fact that when the two hemispheres of the brain are separately stimulated at two very near but still different frequencies; this slight difference has a profound psychological effect on the user, namely rapid disassociation from self awareness. We again point out that the Examiner himself agrees that there is no explicit or implicit teaching of the left and right hemispheres being stimulated at different frequencies. In particular, the slight frequency variation taught in the present claims cannot be found anywhere in Gorges.

Furthermore, there is no teaching of these frequencies of stimulation being used in conjunction with the slightly varied left and right brain hemisphere stimulation taught in claim 9. As well, Gorge does not teach, mention or infer any frequency use of less than 1 Hz, whereas present claim 12 teaches a range of 0 to 4 Hz.

The dissociative aspect of dual frequency stimulation is a particularly important and unique feature of the present invention. Dual-frequency entrainment is much richer in stimulation than single frequency stimulation and is therefore more effective in overwhelming the frontal and pre-frontal cortexes of the human brain, thereby preventing and inhibiting thoughts that induce fear and anxiety and allowing the user to relax, which has not been similarly seen in single frequency stimulation. The present inventor has conducted extensive testing with both single frequency and dual frequency stimulation and has found that single

frequency stimulation had nearly no effect at all on patients suffering from high levels of anxiety. By contrast, dual frequency stimulation provide profound relief to such patients. With respect to treating attention deficit disorder (ADD), seniors with cognitive decline and patients with depression, many of these brain signatures had not been mapped and were not known or fully understood at the time of the Gorges's patent. Much of this mapping was conducted by the present inventor using QEEG analysis.

The Examiner cites Col 2, lines 40-46 and Col 7, lines 13-16 as teaching the features of claims 10, 11, and 12. As stated in Applicant's previous response, a detailed reading of these sections of Gorge, did not reveal any teaching of a process of stimulating the left and right brain hemispheres at a low beta frequency of between 12-15 Hz (claim 10), at a low-alpha or theta frequency of between 5-9 Hz (claim 11) or at a delta frequency of between 0-4 Hz (claim 12).

The Examiner will also note that claims 10 to 12 have been amended to identify that the process of claim 10 is to reduce anxiety and mental chatter as causes of insomnia, the process of claim 11 is to reduce physical tension, together with anxiety and mental chatter as causes of insomnia, and that the process of claim 12 is to reduce chronic pain from injury or fibromyalgia as a cause of insomnia. Applicant submits that given the context of these claims, there is no teaching in Gorge of such specific treatments of insomnia using the process taught in these claims.

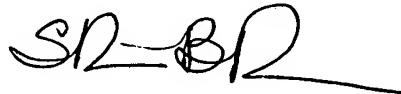
Regarding present claims 15 to 17, the Examiner admits that the cited reference is silent on the use of photic stimulation for pacing a patient's breathing. The present inventors have found that breathing at around 5 to 7 breaths per minute is exceptionally effective in calming anxiety and stress in patients. However, it is extremely difficult to induce such a breathing rate in patients who are already anxious and stressed people, since such people have trouble slowing themselves down and the effort of slowing breathing down often results in more stress. The present inventor has found that using a heartbeat rate of 20 to 28 beats per minute and having the patients inhale for 2 beats and exhale for 2 beats, induces the desired breathing rate of 5 – 7 breaths per minute.

Furthermore, regarding claim 17, the Examiner suggests that Gorges describes providing an auditory cue at two to four times the predetermined breathing rate. This is incorrect as Col. 3, lines 3-7 of Gorges teach "...increasing or decreasing the heartbeat sound

rate” (emphasis added). The heartbeat auditory cue is decidedly different to a patient’s predetermined breathing rate and the two are not interchangeable. As admitted by the Examiner, Gorges is completely silent on breathing rate and therefore makes no mention of increasing this value.

In view of the foregoing arguments and amendments, Applicant respectfully submits that the application is now in good order for allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'SR-BR' followed by a long horizontal stroke.

Shohini Bagchee  
Reg. No. 55,959  
Tel (613) 237-6900  
Our File No. 49425  
June 25, 2007